

With driving and steering available literally for the asking at any or all of the four wheels, the **VOICE COMMAND VEHICLE** may be the ultimate parking-lot guerrilla. The biggest current hangup in development: filtering out the wishes of back-seat drivers who insist on thinking out loud.

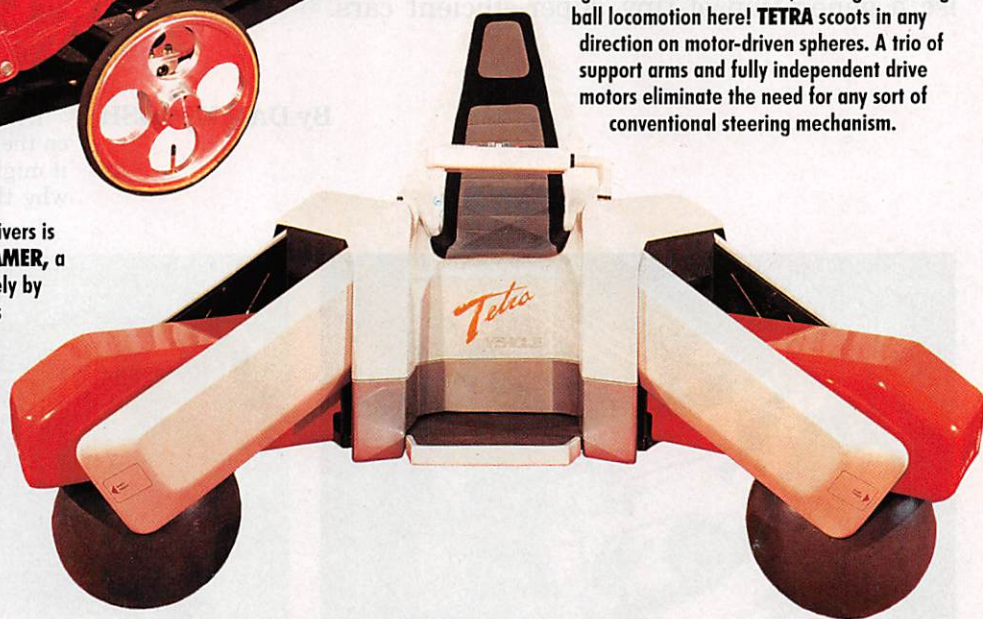


Holy outback, Martha! It's the rarely seen mating ritual of all-terrain vehicles! With two frames and nine wheels, the **NEW WALKER** leapfrogs one set of wheels at a time to amble over obstacles or turn in its own length.



Noise pollution emitted by gridlocked drivers is converted to useful energy by the **SCREAMER**, a single-seater that regulates speed entirely by the volume of the driver's voice. It works equally well in all languages, but self-control is strongly advised.

Forget about all-wheel drive, we've got bowling-ball locomotion here! **TETRA** scoots in any direction on motor-driven spheres. A trio of support arms and fully independent drive motors eliminate the need for any sort of conventional steering mechanism.



CARS

I've always figured that if you told a group of car engineers to put all seriousness aside, they'd end up drawing computer-generated happy faces on their pocket protectors. The winning entrants in a contest for Toyota engineers and technicians disprove my theory, though, with high-mileage alternatives to everyday transportation. Toyota sponsors the contest to encourage its engineers to stretch their imagination.—Norman S. Mayersohn

CAR MAKERS RACE TO PRODUCE TWO-STROKES

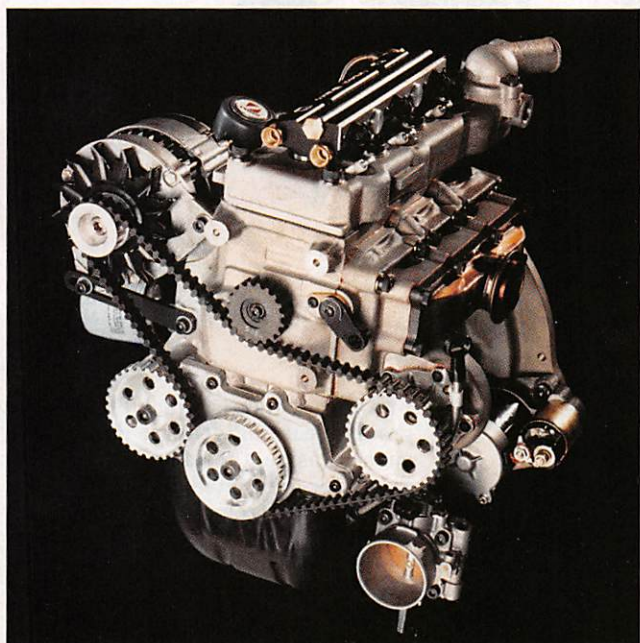
Small in size but big in output, new two-stroke engines promise a generation of tiny, super-efficient cars.

By DAN McCOSH

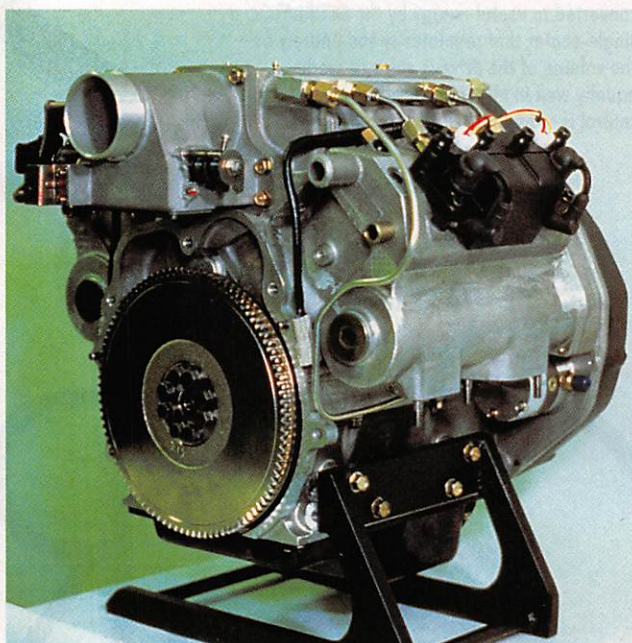
The significance of that mildly decrepit Ford Escort driving down a snow-dusted road in central Michigan wasn't apparent to the impatient pickup truck driver hanging close to my back bumper. The tailgater saw only an entirely unremarkable automobile from the outside, but under the Escort's hood was a tiny 1.3-liter two-stroke engine. This experimental engine has become the centerpiece of a feverish competition among engineering teams around the world to build a practical two-stroke power plant.

The truck driver was irritated because I was slowly accelerating from about 20 mph in fourth gear, deliberately lugging the prototype engine at a speed that normally would have the car snapping and jumping like a dog on a leash. Instead, it was ticking over smoothly, barely accelerating, with an exhaust note that had a sharp edge but no trace of misfiring. If only that truck driver knew it was the measured pace of automotive progress that was slowing his morning's work.

Even if my tailgater was up to date on the latest technology developments, it might not have been obvious to him why there's suddenly so much inter-



Orbital's latest design is a one-liter 116-pound externally scavenged three-cylinder that tucks the scavenge pump behind the flywheel to keep the overall package size small. Output is 90 hp at 6,000 rpm.



Subaru's 1.6-liter V4 is reportedly slated for installation in a small pickup truck by 1993. Less than 16 inches long from front to back, it uses a screw-type supercharger to produce 176 hp at 5,200 rpm.